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Process and Device for Managing Automatic Data Flow  
Between Data Processing Units for Operational Order Processing

### Claims

We claim:

1. A process for control of automatic data flow between data processing units (3, 4, 5, 6, 7, 8, 9) for processing orders related to variant products, comprising at least one ERP system (4) for resource planning for the order processing as well as one order preparation unit (9) for preparation of the order to be processed, wherein a set of product variables is held ready by a central control unit (1) for the appropriate variant product, wherein the order preparation unit (9) assigns the values retrieved for the product variables to the set of product variables so that a set of customer-specific product parameters is produced, and wherein a set of ERP parameters that the ERP system (4) needs for processing the order is automatically generated from the set of specific product parameters in a data format suitable for the ERP system and the same are forwarded to the ERP system (4) by the central control unit (1).

2. Process according to one of the above Claims wherein a set of CAD parameters that a CAD system requires to process an order is automatically generated by the central control unit from the customer-specific product parameters previously produced in the data format compatible with the CAD system and forwarded from the central control unit to the CAD system.
3. Process according to one of the above Claims wherein the set of variables held ready by the central control unit (1) is determined based on the ERP parameters required by the ERP system (4) and based on the CAD parameters required by the CAD system (3), wherein corresponding and/or dependent ERP parameters and CAD parameters are linked to a variable in the central control unit.
4. Process according to one of the above Claims, wherein the data flow between the ERP system (4) and the CAD system (3), on the one hand, and between a production control center, on the other, is controlled by the central control unit (1), wherein a set of production parameters required by the production control center (5) for processing the order is generated by the central control unit (1) from the data retrieved from the order preparation unit (9), the data prepared by the ERP system and/or the data prepared by the CAD system (3), in a format compatible with the production control center (5), and is forwarded automatically to the production control center (5) by the central control unit.

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5. Process according to one of the two foregoing Claims wherein only the CAD parameters previously generated are stored and/or managed in the central control unit and are re-prepared again at need each time.
6. Device for carrying out the process according to one of the above claims for control of the automatic data flow between data processing units for order processing for a variant product, which device comprises at least one ERP system (4) for resource planning for the order processing, as well as an order preparation unit (9) for preparing the current order, with a central control unit (1) that can be linked with each of the data processing units (3, 4, 9), wherein the central control unit (1) has a memory (10) in which a set of product variables is held ready, wherein the central control unit has data linkage means (11) that links the ERP parameters required by the ERP system (4) to process the current order with the set of product variables, wherein the central control unit has control means (13) that assign the values retrieved by the order preparation unit (1) for the product variables to the set of product variables such that a set of specific product parameters is produced and said central control unit also automatically generates a set of ERP parameters in a data format compatible with the ERP system from the set of specific product parameters and forwards the same to the ERP system (4).
7. Device according to the preceding Claim wherein the central control unit (1) can be connected with a CAD system (3) wherein the data linkage means (11) links CAD parameters with the set of product variables, which CAD parameters are required by the CAD system for processing the current order, and wherein the control means (13) of the central control unit (1) automatically generates a specific set of CAD parameters in a data

format compatible with the CAD system from the set of specific product parameters previously produced and forwards the same to the CAD system (3).

8. Device according to the preceding Claim wherein the data linkage means (11) comprises a logic module (12) that assigns only one common product variable to the corresponding and/or dependent ERP and CAD parameters, stores the current dependency between the ERP and CAD parameters and determines the current ERP or CAD parameters from the corresponding product variables that have been assigned variables, using the related stored dependencies.
9. Device according to one of the preceding Claims wherein the central control unit (1) can be connected with a product control center (5), where a set of production control variables is held ready in the memory (10) and the data linkage means (11) is formed for linkage of the production control variables with the CAD parameters of the CAD system (3) and the ERP parameters of the ERP system (4), wherein the central control unit (1) comprises control means (13) that generates a set of production parameters required by the production control center (5) for processing the order in a format compatible with the production control center (5) from the data retrieved from the ERP system (4) and/or from the data held ready in the CAD system (3), and automatically forwards the same to the production control center.
10. Device according to one of the preceding Claims, wherein order simulation means (14) are provided that generates an order simulation query to the ERP system (4) based on the set of product parameters and forwards

supply data, such as delivery date, price, etc., that the ERP system supplies as a function of the order simulation query, to the order preparation unit.

11. Device according to the preceding Claim wherein online connection and communication are provided between the order simulation means (14) and the order preparation unit (9).
12. Device according to one of the preceding Claims, wherein the order preparation unit (9) comprises a visualization unit (15) for display of the variant product that comprises, in turn, a storage unit (16) in which a parameterized model of the variant product is stored, wherein the visualization unit (15) fills the variables of the parameterized model with data retrieved for the variant product, and displays the variant product based on variables determined in this manner.
13. Device according to one of the preceding Claims wherein only the previously-generated CAD parameters, based on which a CAD drawing can be generated, are stored in the memory (1) of the central control unit (1) instead of a complete CAD drawing.